REMARKS

Applicant is in receipt of the Office Action mailed April 5, 2005. Claims 1-68 were rejected. Claims 8, 42, 52, 57, 60, 65, and 68 have been amended. Claims 1-68 remain pending in the application.

<u>Section 102(e) Rejection</u>

Claims 53-60 were rejected under 35 U.S.C. 102(e) as being anticipated by Blowers et al., U.S. Patent No. 6,298,474 (hereinafter "Blowers"). Applicant respectfully traverses this rejection.

Blowers relates generally to a method and system for interactively developing application software for use in a machine vision system. Applicant respectfully submits that Blowers does not teach or suggest all the limitations of claims 53-60. Claim 53 recites as follows:

53. (Previously Presented) A computer-implemented method for creating a prototype that includes machine vision <u>and data acquisition (DAQ) functionality</u>, the method comprising:
displaying a graphical user interface (GUI) that provides GUI access to a set of operations, wherein the set of operations includes one or more machine vision operations <u>and one or more DAQ operations</u>;
receiving user input to the graphical user interface specifying a sequence of operations, wherein the specified sequence of operations includes at least one machine vision operation <u>and at least one DAQ operation</u>; and
storing information representing the specified sequence of operations in a data structure, wherein the specified sequence of operations comprises the prototype.

Applicant notes that DAQ refers to a specific instrumentation technology for acquiring measurement data. Blowers nowhere teaches the use of DAQ operations or a DAQ measurement device. The terms DAQ and data acquisition are entirely absent from Blowers' disclosure. Also, FIGS. 2 and 3 illustrate several devices in Blowers' machine vision system, but they do not show a DAQ device.

Blowers is directed toward developing software for machine vision applications. DAQ devices are typically used in test and measurement applications, e.g., to acquire or

analyze measurement data from a DAQ device. Applicant can find no teaching in Blowers regarding the development of software to perform a measurement application involving data acquisition from a DAQ device. Blowers' machine vision system operates on input images acquired by cameras such as shown in FIG. 2, not on measurement data acquired from a DAQ device.

In particular, Blowers does not teach or suggest, "displaying a graphical user interface (GUI) that provides GUI access to a set of operations, wherein the set of operations includes ... one or more DAQ operations," as recited in claim 53. The Office Action states that this element of claim 53 is taught by Blowers at Col. 8, line 61 et seq. However, Applicant can find no teaching or illustration of a GUI that provides GUI access to one or more DAQ operations.

The cited portion of Blowers refers to FIGS. 5 and 6. FIG. 6 illustrates a task sequencer list. Graphical representations or icons are selected from the tool boxes of FIG. 5 which correspond to desired functional tasks and are linked into the tree structure of FIG. 6. FIG. 5 illustrates three tool boxes from which the user may choose icons corresponding to desired functional tasks: a visions tool box, a program options tool box, and a Comms & I/O tool box (see Col. 9, lines 32-34). As described in detail at Col. 9, line 35 – Col. 10, line 12, the visions tool box provides access to vision tools, such as a caliper tool, a feature find tool, a template tool, etc. The visions tool box does not provide access to any DAQ operations. As described in detail at Col. 10, lines 13-63, the program options tool box provides access to navigational tools to customize the flow of the application software, such as a product folder, job folder, If...Then...Else step, etc. The program options tool box does not provide access to any DAQ operations.

Applicant can find no detailed description in Blowers of the Comms & I/O tool box and submits that Blowers contains no teaching or suggestion whatsoever that the Comms & I/O tool box would provide access to any DAQ operations. As noted above, Blowers is directed toward machine vision applications and contains no teaching at all regarding the development of software to perform a measurement application involving data acquisition from a DAQ device. Instead, Blowers' machine vision system operates on input images acquired by cameras such as shown in FIG. 2. Blowers does not

describe or illustrate the use of DAQ devices at all, and thus there would be no reason for the Comms & I/O tool box to provide access to any DAQ operations.

For reasons similar to those discussed above, Applicant also respectfully submits that Blowers does not teach, "receiving user input to the graphical user interface specifying a sequence of operations, wherein the specified sequence of operations includes ... at least one DAQ operation," as recited in claim 53. The Office Action states that this element of claim 53 is taught by Blowers at Col. 4, lines 64-67 and Col. 8, lines 9-19. As per Col. 4, lines 64-67, Blowers teaches that, "the system creates jobs that are programmed through selecting and applying a sequence of tasks," but does not teach that the sequence of tasks includes at least one DAQ operation, as recited in claim 53. As per Col. 8, lines 9-19, this portion of Blowers teaches programming the machine vision system to include custom controls for image processing, image analysis, third party machine vision products, etc., but does not teach receiving user input to a graphical user interface specifying a sequence of operations that includes at least one DAQ operation.

Thus, for at least the reasons set forth above, Applicant respectfully submits that claim 53 is patentable over Blowers. Since claims 54-60 are dependent upon claim 53, Applicant submits that these claims are also patentable over Blowers for at least this reason. Furthermore, Applicant respectfully submits that claims 54-60 recite numerous additional limitations that are not taught or suggested by Blowers.

For example, amended claim 57 recites the additional limitation of, "wherein the prototype is operable to ... acquire measurement data from a DAQ device". As discussed above, Blowers does not teach acquiring measurement data from a DAQ device. The Office Action cites Col. 11, line 65 et seq. However, this portion of Blowers teaches meteorology functions for the measurement of visual features in an acquired image, such as distances, angles, diameters, etc. Measuring visual features in an image that has been acquired is not at all the same as acquiring measurement data from a DAQ device.

Claim 58 recites the additional limitation of, "wherein the prototype is operable to: control an image acquisition device to acquire one or more images of an object; and control a data acquisition device to acquire measurement data of the object". The Office Action again cites Col. 11, line 65 et seq. However, as noted above, this portion of Blowers teaches meteorology functions for the measurement of visual features in an

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acquired image. Blowers does not teach controlling an image acquisition device to acquire one or more images of an object <u>and</u> controlling a data acquisition device to acquire measurement data <u>of the object</u>. In other words, in claim 58, the measurement data is acquired from the same object from which the one or more images are acquired. Blowers does not teach acquiring images of an object <u>and</u> acquiring measurement data of the object. Furthermore, the one or more images in claim 58 are acquired by an image acquisition device, and the measurement data is acquired by a data acquisition device. Blowers does not teach the use of two different devices, where one is an image acquisition device to acquire images of an object and the other is a data acquisition device to acquire measurement data of the object.

Claim 60 recites the additional limitation of, "programmatically generating a <u>graphical program</u> operable to perform the specified sequence of operations, wherein the graphical program comprises a plurality of interconnected nodes that visually indicate functionality of the graphical program". The Office Action states that, "Blowers teaches creating program instructions executable to perform the specified sequence of operations". However, claim 60 recites, "programmatically generating a <u>graphical program</u> operable to perform the specified sequence of operations". Blowers does not teach the concept of a graphical program that comprises a plurality of interconnected nodes that visually indicate functionality of the graphical program. More particularly, Blowers does not teach programmatically (automatically) generating such a graphical program, where the programmatically generated graphical program is operable to perform a sequence of operations that has been specified by user input as recited in claim 53.

Section 103(a) Rejection

Claims 1-52 and 61-68 were rejected under 35 U.S.C. 103(a) as being unpatentable over Blowers et al., U.S. Patent No. 6,298,474 (hereinafter "Blowers") in view of Weinhofer, U.S. Patent No. 6,442,442. Applicant respectfully traverses this rejection.

As per claims 1-44 and 61-68, the independent claims recite similar limitations

regarding DAQ operations as discussed above with respect to claim 53. For example, claim 1 recites as follows:

> 1. (Original) A computer-implemented method for creating a prototype that includes motion control, machine vision, and data acquisition (DAQ) functionality, the method comprising:
>
> displaying a graphical user interface (GUI) that provides GUI access to a set of operations, wherein the set of operations includes one or more motion control operations, one or more machine vision operations, and one or more DAQ operations;
>
> receiving user input to the graphical user interface specifying a sequence of operations, wherein the specified sequence of operations includes at least one motion control operation, at least one machine vision operation, and at least one data acquisition operation; and
>
> storing information representing the specified sequence of operations in a data structure, wherein the specified sequence of operations comprises the prototype.

The Office Action states that Blowers teaches these limitations regarding DAQ operations. However, Applicant respectfully disagrees, for reasons similar to those discussed above with respect to claim 53. Applicant thus submits that Blowers and Weinhofer, taken either singly or in combination, do not teach all the limitations of claims 1-44 and 61-68, and thus, these claims are allowable for at least this reason.

Furthermore, Applicant submits that a proper *prima facie* case of obviousness has not been established for claims 1-52 and 61-68 for several reasons. For example, Blowers and Weinhofer are not analogous art. Blowers relates to the art of machine vision systems. In contrast, Weinhofer relates to the art of motion control systems. One skilled in the art of machine vision systems cannot be presumed to be aware of art in the field of motion control systems, and vice versa.

Furthermore, Applicant respectfully submits that there is no evidence of any teaching, suggestion, or motivation to combine Blowers and Weinhofer. As held by the U.S. Court of Appeals for the Federal Circuit in *Ecolochem Inc. v. Southern California Edison Co.*, an obviousness claim that lacks evidence of a suggestion or motivation for one of skill in the art to combine prior art references to produce the claimed invention is defective as hindsight analysis. Furthermore, the showing of a suggestion, teaching, or motivation to combine prior teachings "must be clear and particular. . .Broad conclusory statements regarding the teaching of multiple references, standing alone, are not

'evidence'." *In re Dembiczak*, 175 F.3d 994, 50 USPQ2d 1614 (Fed. Cir. 1999). The art must fairly teach or suggest to one to make the specific combination as claimed. That one achieves an improved result by making such a combination is no more than hindsight without an initial suggestion to make the combination.

The Office Action states that, "One would have been motivated to make such a combination because an all-purpose graphical automotive controller would have been obtained, as taught by Weinhofer." However, Applicant can find no teaching in Weinhofer of an "all-purpose graphical automotive controller" and respectfully requests the Examiner to cite the specific portion of Weinhofer that teaches the "all-purpose graphical automotive controller". Furthermore, Applicant respectfully submits that teaching an "all-purpose graphical automotive controller" would not amount to a clear and particular teaching or suggestion for combining Blowers with Weinhofer.

Furthermore, Applicant submits that neither Weinhofer nor Blowers contain any clear teaching or suggestion for combining the two references. Blowers is directed toward developing software for machine vision applications. Weinhofer is directed toward developing software for motion control applications. Applicant can find no teaching in Blowers regarding the development of software to perform an application involving motion control as taught in Weinhofer. Similarly, Applicant can find no teaching in Weinhofer regarding the development of software to perform an application involving machine vision as taught in Blowers. Thus, there would be no motivation for incorporating the machine vision operations taught in Blowers into Weinhofer's system or for incorporating the motion control operations taught in Weinhofer into Blowers's system.

Applicant thus respectfully submits that claims 1-52 and 61-68 are allowable over the cited references for at least the reasons set forth above. Furthermore, Applicant respectfully submits that numerous ones of the dependent claims recite additional limitations that are not taught by either of the references, taken either singly or in combination.

For example, claim 21 recites as follows:

21. (Original) The method of claim 1, wherein the sequence includes one or more motion control operations, and wherein the method further comprises:

displaying one or more views of the motion control performed by the motion control operations in the sequence on the graphical user interface, wherein the one or more views graphically preview the cumulative movement specified by the motion control operations in the sequence.

The Office Action states that these features are taught by Weinhofer at Col. 3, line 63 et seq. and FIG. 3 and corresponding text. Applicant respectfully disagrees. The cited portion at Col. 3, line 63 et seq. pertains to the display of a program that comprises various graphical elements, such as icons and data flow lines, where the program is operable to perform motion control. FIGS. 2 and 3 illustrate exemplary programs constructed using the programming interfaces taught in Weinhofer. However, displaying a program that is operable to perform motion control is not at all the same as displaying one or more views of the motion control that is performed by the program. Claim 21 recites that one or more views of the motion control performed by the motion control operations in a sequence are displayed on a graphical user interface, where the one or more views provide a graphical preview of the cumulative movement specified by the motion control operations. For example, Figs. 6A – 6F of the present application illustrate an exemplary GUI operable to display views for graphically previewing the motion control performed by motion control operations in a sequence, according to one embodiment. Weinhofer simply does not describe or illustrate a GUI to graphically preview the cumulative movement specified by one or more motion control operations.

As another example, claim 29 recites as follows:

29. (Original) The method of claim 1, further comprising:
programmatically converting the sequence of operations to a format usable for configuring an embedded device to perform the sequence of operations; and
configuring the embedded device to perform the sequence of operations using the format.

The Office Action states that these features are taught by Blowers at Col. 2, line 47 et seq. Applicant respectfully disagrees. There is simply no teaching whatsoever regarding programmatically converting a sequence of operations to a format usable for configuring an embedded device to perform the sequence of operations and configuring the embedded device to perform the sequence of operations using the format.

CONCLUSION

Applicant submits the application is in condition for allowance, and an early notice to that effect is requested.

If any extensions of time (under 37 C.F.R. § 1.136) are necessary to prevent the above referenced application(s) from becoming abandoned, Applicant(s) hereby petition for such extensions. If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert & Goetzel PC Deposit Account No. 50-1505/5150-58200/JCH.

Also enclosed herewith are the following items:

☒ Return Receipt Postcard

Respectfully submitted,

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